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ABSTRACT

The present analysis estimates the impact of collective bargaining on the earning of public school teachers in the state of Missouri and compares the results with those obtained in a previous study in California. Section A briefly outlines the measures of the impact of bargaining used in both the studies. Section B compares the legal status of bargaining in the two states. Section C presents the model for estimating the impact of bargaining on teachers' salaries, a discussion of the data used for the analysis, and the empirical results. Section D contains some concluding remarks. The author notes that given the absolute orders of magnitude of the estimates for California (projecting to somewhere between 8 and 17 percent higher wages under collective bargaining) and Missouri (about 14 percent higher), the similarity of the patterns of bargaining effects in both states, and the comparability with other estimates of public and private sector union effects, it would appear doubtful that differences in bargaining statutes would have much effect on the economic outcomes of bargaining. (Author/IRT)

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THE IMPACT OF BARGAINING AND BARGAINING STATUTES ON THE EARNINGS OF PUBLIC SCHOOL TEACHERS: A Comparison in California and Missouri

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THE IMPACT OF BARGAINING AND BARGAINING STATUTES ON THE EARNINGS OF PUBLIC SCHOOL TEACHERS:

A Comparison in California and Missouri

Abstract

There is a long-standing interest among labor economists in the effects of collective bargaining in the public sector and among industrial relations experts in the impact of differences in the legal status of public sector bargaining on the outcomes of the bargaining process. It is the purpose of this paper to shed some light on both of the questions by extending the previous study of the impact collective bargaining in California public school districts. The focus of the present analysis is to estimate the impact of collective bargaining on the earnings of public school teachers in the state of Missouri and to compare the results with those obtained in the previous study for the state of California.

The results reveal the same basic patterns and magnitudes of bargaining effects in the two states despite the differences in the legal status of bargaining. Moreover, both studies show bargaining that the extent of bargaining within a region tends to have a substantial effect on the earnings of teachers holding other factors constant.

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There is a long-standing interest among labor economists in the effects of collective bargaining in the public sector and among industrial relations experts in the impact of differences in the legal status of public sector bargaining on the outcomes of the bargaining process. It is the purpose of this paper to shed some light on both of these issues by extending a previous study by this author (1977) of the impact of collective bargaining in California public school districts. The focus of the present analysis is to estimate the impact of collective bargaining on the earnings of public school teachers in the state of Missouri and to compare the results with those obtained in the previous study for the state of California.

Three issues are addressed by this comparison of results in the two states. First, using the technique for measuring bargaining effects developed in the California study, one can determine whether similar patterns of bargaining effects exist in the two states. Second, because of data limitations in the two states, one can compare the estimates of these bargaining effects as measured in one case (the California study) using the district as the unit of analysis and examining the variations in schedule salaries, while in the other case (the present analysis of Missouri) using the individual teacher as the unit of observation in order to explain the variations in actual earnings.[1] Finally, this comparison yields some tentative evidence on the effects of differences in the legal status of bargaining in the two states.

The remainder of this paper is organized as follows: Section A briefly outlines the measurement of the impact of bargaining used in both the previous California study and the present analysis of the Missouri data. Section B compares the legal status of bargaining in the two states. Section C

presents the model for estimating the impact of bargaining on teachers' salaries, a discussion of the data used for the analysis, and the empirical results. Section D contains some concluding remarks.

A. Measuring the Impact of Bargaining

The approach of previous studies in determining the impact of teacher bargaining involves the specification of an explanatory equation for teachers' salaries and adding to that equation a dichotomous dummy variable which indicates whether or not the district bargains.[2] In effect, these studies attempt to answer the question, "Does the fact that a school district bargains or doesn't bargain have any impact on the salaries of teachers within the district, ceteris paribus?" The results of these studies suggest that bargaining has had a negligible effect on teachers' salaries with most estimates in the zero to three percent range, although some have revealed effects as large as just under 5%.

What these previous studies do not account for are the possible spillover effects of bargaining within a region or labor market. In an attempt to measure these spillover effects, this author (1977) proposed to include two bargaining variables in the wage regression in order to capture both the district by district as well as the regional effects of bargaining. The district by district effects were measured by a dichotomous dummy variable, BARG, which equals one if the district bargains and zero, otherwise. The regional effects were measured by the variable U which is defined as the proportion of teachers in the region (in which the district is located) who are covered by bargaining agreements. The notion underlying this approach is that the wages of bargaining and nonbargaining districts alike will be affected by the extent of bargaining within the region due to "threat" effects (i.e., the

attempt by nonbargaining districts to defer the advent of bargaining by matching gains in adjacent bargaining districts) and the efforts of teachers in one district to build on the gains of teachers in another district.

Whatever the particular rationale, the empirical results in the California study reveal that district level effects of bargaining tend to be quite small, while regional effects of bargaining were not only statistically significant but were fairly large in magnitude. Estimated salary differentials due to the extent of bargaining ranged from eight to seventeen percent between regions with approximately 100% coverage of teachers relative to regions with virtually no teachers covered by bargaining contracts (for the school year 1970-71).

B. Legal Status of Bargaining

During the year (1970-71) in which the California study was carried out, California's bargaining statute required school boards to "meet and confer" with representatives of employees, and all "professional concerns" and "conditions of service" were negotiable.[3] However, the statute provided for no enforcement agency and no formal impasse procedures, and it permitted multilateral representation of employees by labor organizations.

Although the state of Missouri had a "meet and confer" type of statute for public employees during the year (1974-75) of the study, teachers and other certificated school employees at the kindergarten through twelfth grade level were explicitly excluded from the law.[4] Based on a February 1974 State Supreme Court decision, teachers' organizations were not regarded as labor organizations. However, negotiations were not prohibited, although current interpretation of the law would appear to suggest that it was beyond the power of the local school board to enter into a labor contract with representatives of the teachers in their districts. Despite its legal status in Missouri,

it is interesting to note that in reviewing the response to the questionnaires about the status of bargaining arrangements sent out to local school districts in connection with this study, there were at least two respondents who indicated (even though not asked this question) that bargaining was "illegal" in the state of Missouri. Moreover, at least one state official when contacted about this issue provided the same basic interpretation of the law (as it existed in 1974-75). Although strictly speaking this interpretation of the illegality of bargaining is not correct, it is nevertheless of some interest to note that the general interpretations of the law were not uniform thrcughtout the state.

Despite the legal status of bargaining in Missouri, a questionnaire sent out to the superintendents of the local school districts in the state revealed that about 10% of the 326 districts responding to the survey engaged in "formal negotiations (which were reduced to writing) with a teachers' organization," 46% engaged in "informal negotiations (which were not reduced to writing) with a teachers' organization," and the remaining 44% of the districts had boards that made decisions regarding salaries and working conditions "unilaterally."[6] Of even greater significance was the fact that the 10% of the districts engaging in formal bargaining employed about 39% of the teachers in the state.

C. <u>The Empirical Analysis of Bargaining in Missouri</u>

The methodology for determining the impact of bargaining on teachers' salaries involves specification of the following earnings function for teachers:

$$(1)\quad \ln SAL_i = \Sigma_j \alpha_j \cdot X_j + \beta_i \cdot BARG_i + \beta_2 \cdot U_1 + e_i$$

where SAL_i is the observed salary for teacher i; the X_j's include the personal attributes of the teacher as well as the characteristics of their jobs, districts and regions in which they are located; $BARG_i$ equals one if the district in which teacher i is employed bargains, and zero, otherwise; U_i equals the proportion of teachers in the region (in which the district is located) who are covered by bargaining agreements; and e_i is the stochastic error term. The coefficient β_1 is referred to subsequently as the district effect of bargaining and the product of $\beta_2 \cdot U_i$ will be referred to as the regional effect of bargaining. A teacher employed in a region in which no bargaining occurs will receive a salary determined entirely by the X_j's (i.e., $BARG_i = U_i = 0$). A teacher employed by a nonbargaining district (i.e., $BARG_i = 0$) located in a region in which bargaining does occur (i.e., for which $0 < U_i < 1.0$) will receive a salary determined by

$$(2) \quad \ln SAL_i = \Sigma_j \alpha_j \cdot X_j + \beta_2 \cdot U_i + e_i$$

Finally, a teacher employed in a district which bargains will receive a salary defined by

$$(3) \quad \ln SAL_i = \Sigma_j \alpha_j \cdot X_j + \beta_1 + \beta_2 U_i + e_i$$

where $BARG_i = 1$ and $0 < U_i \leq 1.0$.

The empirical analysis is carried out for the 1974-75 school year on a random sample of 2,470 full-time teachers employed in school districts, located within the five SMSA's, which responded to the bargaining survey. The reason for restricting the analysis to the metropolitan areas is because a high percentage (95%) of teachers employed in districts within these areas

responded to the survey questionnaire and because the previous California study focused only on the metropolitan areas of that state.

Data on teacher and district characteristics (the X_j's) were obtained from information gathered on individual school personnel and local school districts by the Missouri Department of Elementary and Secondary Education and includes: data on individual teachers indicating educational preparation, total years of experience, years employed in present district, level of instruction, and sex; and school district data reflecting per pupil expenditure, median family income, average teacher turnover rate, expenditure per pupil on instructional supplies, the teacher-pupil ratio, district size, proportion of minority pupils, and type of district (i.e., elementary or high school/elementary school combined). In addition, each of the central cities included in the sample (i.e., Columbia, St. Joseph, Springfield, Kansas City, and St. Louis) are represented with a dummy variable to reflect the considerable differences which characterize the ambiance of these five school districts. A dummy variable reflecting whether the district is located in a slow or fast growth suburb (according to Census classification) is also included. Finally, measures of the opportunity wage facing teachers across the counties within the five SMSA's were obtained from Census data. Two alternative benchmark wages were tried in the empirical analysis: the earnings of male professional, managerial and kindred workers and the earnings of female clerical and kindred workers. The results of the statistical analysis were essentially identical.

The bargaining variables (BARG and U) were derived from the responses to the survey questionnaires sent around to the local school districts.[7]

The estimated earnings function for teachers is presented in Table 1 and explains almost 90% of the variance in teachers' salaries across the sample. In general, the empirical estimates of the teachers' salary equation reported in Table 1 conform to *a priori* expectations.[8] Therefore, the remainder of this discussion focuses on the effects of bargaining.

The variables, BARG and U, reflecting the impact of bargaining indicate that the patterns of bargaining effects in Missouri are essentially the same as those found in the previous California study. The existence of bargainings (either FORMAL or INFORMAL) in a district appears to have negligible impact on teachers' salaries. However, the regional extent of *formal* bargaining does appear to have a positive and statistically significant impact on salaries.[9] The greater the proportion of teachers covered by formal bargaining agreements within a region (i.e., the greater is U_1), the higher are teachers' salaries, *ceteris paribus*. For example, the estimates indicate that, *ceteris paribus*, districts in the St. Louis metropolitan area, where more than 66% of the teachers are covered by collective bargaining agreements (i.e., where $U_1 = .66$), pay salaries almost 10% higher than they would be in the absence of bargaining in the region (i.e., EXP(.66 x .1388) -1 = .0959). If one were to extrapolate from this result, if 100% of the teachers were covered in a region, teachers' salaries would be almost 15% higher, *ceteris paribus*, than in the absence of bargaining.

TABLE 1

PARAMETER ESTIMATES FOR THE TEACHERS' SALARY EQUATION: DEPENDENT VARIABLE = ln TCHR SAL.
(Mean Value of TCHR SAL = $10,160.88)

EXPLANATORY VARIABLE	VARIABLE DEFINITION	ESTIMATED COEFFICIENT	t-RATIO	MEAN VALUE	STANDARD DEVIATION
FORMAL BARGAINING	the district has formal bargaining*	0.0022	0.57	0.4308	0.582
INFORMAL BARGAINING	the district has informal bargaining*	-0.0026	0.50	0.4065	0.491
NO BARGAINING	the district has no bargaining*	------	----	------	------
REGIONAL BARGAINING	proportion of teachers in the region covered by formal bargaining	0.1388	7.30	0.5236	0.2041
EDUC NO BA	the teacher has not earned a B.A. degree*	0.1482	7.67	0.0061	0.077
EDUC BA	the teacher has earned a B.A. degree*	------	----	------	------
EDUC 15-29 GRAD HRS	the teacher has earned 15-29 graduate hours*	0.0365	6.38	0.0794	0.270
EDUC 30-44 GRAD HRS	the teacher has earned 30-44 graduate hours*	0.0224	2.61	0.2364	0.425
EDUC 45-59 GRAD HRS	the teacher has earned 45-59 graduate hours*	0.0329	3.24	0.0632	0.243
EDUC 60 OR MORE GRAD HRS	the teacher has earned 60 or more graduate hours*	0.0832	7.78	0.0538	0.225
EDUC MA	the teacher has earned at most an M.A. degree*	0.1224	14.31	0.3243	0.468
EDUC ED SPEC CERT	the teacher has earned at most an Educ spec. certificate*	0.1437	7.13	0.0069	0.082
EDUC PHD	the teacher has earned a Ph.D. degree*	0.1682	5.67	0.0028	0.053
EXP TOTAL YRS	the teacher's total years of experience	0.0176	16.81	10.3113	9.110
EXP TOTAL YRS IF 10-19[a]	the teacher's total years of exp. if between 10 and 19 yrs.	-0.0010	1.40	3.2308	5.928
EXP TOTAL YRS IF $\geq$ 20[a]	the teacher's total yrs. of exp. if $\geq$ to 20 yrs.	0.0095	11.04	4.4915	10.445
EXP THIS DIST TOTAL YRS	the teacher's exper. in current district	0.0162	13.52	7.4587	6.796
EXP THIS DIST TOTAL YRS IF 10-19[a]	the teacher's exper. in current district if between 10 and 19 yrs.	-0.0044	5.96	2.8190	5.665
EXP THIS DIST TOTAL YRS IF $\geq$ 20[a]	the teacher's exper. in current district if $\geq$ to 20 yrs.	-0.0087	10.14	1.8000	6.398
ln (EXPEND/ADA)	the expenditure per pupil in the district	0.2790	9.88	$ 1,133.31	$ 229.63
ln (MEDIAN FAMILY INCOME)	the median family income in the district	-0.0142	0.74	$10,337.16	$2,401.55
HIGH SCH TCH	the teacher is a high school teacher*	-0.0179	2.56	0.2834	0.4507
JR HIGH SCH TCH	the teacher is a junior high school teacher*	-0.0205	2.70	0.1951	0.3964
ELEM SCH TCH	the teacher is an elementary school teacher*	------	----	------	------
TURNOVER RATE ELEM TCH	turnover rate among elementary sch. tchrs times ELEM SCH TCH	-0.2510	5.25	0.0534	0.0668
TURNOVER RATE UPPER GRADE TCH	turnover rate among upper grade tchrs times (HIGH SCH TCH JR HIGH SCH TCH)	-0.0437	0.98	0.0661	0.0823
ln (OTHER INSTR EXPEND/ADA)	instructional expenditures per ADA other than salaries	-0.0239	2.04	$ 83.18	$ 43.94
ln (TEACHER-PUPIL RATIO)	the teacher-pupil ratio in the district	-0.1616	5.21	0.0522	0.0061
SEX MALE	the teacher is a male*	0.0239	7.03	0.2826	0.4504
SEX FEMALE	the teacher is a female*	------	----	------	------
ln (PROF INCOME)	median earnings of male prof., mgr., and kindred workers in the county	0.1356	4.35	$11,071.17	$1,390.34
DIST SIZE <1000 ADA	the district has less than 1,000 pupils in ADA*	------	----	------	------
DIST SIZE 1000-4499 ADA	the district has from 1,000 to 4,499 pupils in ADA*	0.0614	4.66	0.1328	0.3394
DIST SIZE 4500-7499 ADA	the district has from 4,500 to 7,499 pupils in ADA*	0.0985	6.79	0.1202	0.3253
DIST SIZE 7500-19999 ADA	the district has from 7,500 to 19,999 pupils in ADA*	0.0928	6.61	0.3482	0.4765
DIST SIZE 20000-30000 ADA	the district has from 20,000 to 30,000 pupils in ADA*	0.0894	5.52	0.1291	0.3354
COLUMBIA	the teacher is employed in Columbia City School District*	0.0251	1.44	0.0219	0.1463
ST. JOSEPH	the teacher is employed in St. Joseph City School District*	0.0335	2.01	0.0279	0.1648
SPRINGFIELD	the teacher is employed in Springfield City School District*	0.0468	2.77	0.0470	0.2116
KANSAS CITY	the teacher is employed in Kansas City School District*	0.0299	1.73	0.1036	0.3049
ST. LOUIS	the teacher is employed in St. Louis City School District*	0.0937	5.32	0.1449	0.3521
SUBURB SLOW GROWTH	the teacher is employed in a Slow Growth Suburban School District*	0.0121	2.72	0.1887	0.3913
SUBURB FAST GROWTH	the teacher is employed in a Fast Growth Suburban School District*	------	----	------	------
PROP MINORITY PUPILS	the proportion of minority pupils in the district	-0.0148	0.93	0.2038	0.2943
PROP ELEM PUPILS	the proportion of elementary pupils in the district	0.1017	2.35	0.5071	0.0480
ELEM DIST YES	the district is an elementary district*	-0.1912	4.00	0.0024	0.0492
ELEM DIST NO	the district is not an elementary district*	------	----	------	------
CONSTANT		3.1069	----		

R SQUARE = .8873 ADJUSTED R-SQUARE = .8854 F(40,2429) = 478.02 STANDARD ERROR OF THE ESTIMATE = 0.0731

*The variables marked with the asterisk are dichotomous dummy variables.

[a]The two variables (EXP TOTAL YRS IF 10-19 AND EXP TOTAL YRS IF $\geq$ 20) equal the teacher's total years of experience (EXP TOTAL YRS) multiplied by dummy variable which equal one if EXP TOTAL YRS is between 10-19, or greater than 20 years, respectively. Similar definitions apply to the last two EXP variables using EXP THIS DIST TOTAL YRS.

In estimating the impact of bargaining a number of alternative combinations of variables were constructed from the survey responses. The distinction between formal and informal bargaining was initially ignored. Thus, the dummy variable BARG in equation (1) simply reflected whether any kind of bargaining (formal or informal) existed and the variable U_i indicated the proportion of teachers covered by formal or informal bargaining in the region. Since the vast majority of teachers (89%) in the SMSA's were covered by some form of bargaining, this variable exhibited relatively little variation across the SMSA's. Nevertheless, the patterns of the effects of bargaining were the same: negligible district effects with regional effects of the same order of magnitude as those presented in Table 1. However, the measure of regional bargaining was only significant at the 10% level. Separation of bargaining into formal and informal seems to reveal more clearly the impact of bargaining.

One of the implications of these results is that this methodology originally used in the California study appears to yield reasonable results for this new set of data. This suggests that at least until a new set of data becomes available, this methodology appears to capture more accurately the impact of collective bargaining for teachers than the approach used by previous authors.[10] Moreover, as in the California study, the methodology used by previous writers to measure the impact of bargaining appears to lead to biased results. In particular, if the variable BARG (i.e., representing formal bargaining) were entered into the salary equation while omitting the regional variable, the estimated impact of bargaining would be on the order of 1.5% and statistically significant at the 10% level. This result is of the same order of magnitude found by other authors using this approach. Comparing

this result with the estimated 0.3% impact indicated in Table 1, one can immediately see the upward bias imparted to the district by district bargaining effect of omitting the regional variable. This suggests that what small impacts were discovered by other authors were probably biased upward as they measured the district effects of bargaining without considering the regional effects.

It has been suggested that perhaps the bargaining variables reflect some other aspect of the district (or region) which would lead to higher wages.[11] One way to test this hypothesis is to gather data for the districts during a pre-bargaining era and to estimate wage equations for teachers, adding to these equations the current bargaining variables. If these variables turn out to be statistically significant and of a similar order of magnitude, then one could speculate that these variables do reflect some effect other than bargaining. We have no data for the state of Missouri which would allow such a test. However, such a test is possible using California data. The California study was originally carried out for the 1970-71 school year. Similar data were gathered for the 1960-61 school year, five years before the advent of bargaining in California school districts, and the 1970-71 bargaining variables were added to the equation. The results show that the bargaining variables are not only statistically insignificant, but that if anything, wages were somewhat lower in regions where bargaining effects in 1970-71 lead to higher wages for teachers. These results are at least consistent with the hypothesis that the district and regional bargaining variables do indeed pick up the impact of bargaining in the empirical estimates rather than some other phenomena which would lead to the same effect on wages.

D. Summary and Conclusions

Perhaps the major finding of this study is that there does not appear to be much difference in the impact of bargaining between California and Missouri despite apparent differences in existing bargaining legislation. Not only are the patterns of the bargaining effects similar in Missouri and California, which tend to at least provide some support for the methodological framework, but the orders of magnitude are about the same--extrapolating the results in both states just a bit, one would predict that, ceteris paribus, with 100% coverage of teachers within a region that wages would be somewhere between 8 to 17% higher in California and about 14% higher in Missouri. Moreover, these estimates are consistent with estimates of union wage effects in both the public and private sectors (see Ehrenberg [1973], Ashenfelter [1971] and Lewis [1963]. Given the absolute orders of magnitude of these estimates for California and Missouri, the similarity of the patterns of bargaining effects in both states and the comparability with other estimates of public and private sector union effects, it would appear doubtful that differences in bargaining statutes would have much affect on the economic outcomes of bargaining. Nevertheless, these results should be regarded as providing only tentative evidence of the impact of differences in bargaining statutes on bargaining outcomes. First, it ignores the effects of differences in statutes on non-economic outcomes (see McDonnell and Pascal [1979]). Second, further research needs to be done either using cross-sectional samples of school districts in different states operating under different kinds of bargaining statutes or using samples of districts within states which have undergone changes in the legal status of bargaining in public education over time.

Finally, it is of interest to note that the results in the two states were obtained using different units of analysis as the basis for estimating the salary equations for teachers. In California estimates were based on the district, while in Missouri the estimates are based on the individual teacher as the unit of analysis.

Footnotes

[1]In California, there are no data on individual school personnel available, while in the state of Missouri, there was no readily available source with school district salary schedules reported.

[2]See, for example, Baird and Landau, Frey, Kasper (1970), Lipsky and Drotning, and Thornton.

[3]In 1975, the California State Legislature passed a formal collective bargaining law with much stronger provisions and protection for school employees.

[4]See Ross, Vlaanderen, and Millard (1976).

[5]See Peters v. Board of Education (1974) which permitted resolution of disagreements in an advisory and non-binding manner which the board was free to reject and therefore would not be regarded as a labor contract.

[6]Although the 326 districts represent only 58% of the school districts in the state, they represent more than 80% of the teachers in the state. The survey results are even more impressive in the metropolitan areas of the state where 80% of the districts employing more than 95% of the teachers responded to the survey.

[7]The regions used in calculating the proportion of teachers covered by collective bargaining agreements (U) included the counties within the respective SMSA's plus, in some cases, additional counties adjacent to these SMSA's which were regarded as being in the same economic region of the state. The data for this study were originally gathered for the purpose of a study of educational cost differentials (see Chambers, 1978), and for this purpose, economics regions of the state were defined on the basis of population density patterns, natural geographic boundaries, major products produced in each area, and road and highway access. Final decisions on the boundaries for these economic regions were determined with the advice and approval of particular state officials in the Department of Elementary and Secondary Education with whom we had contracted to do the cost of education study.

[8]One apparent anomaly should perhaps be explained. The results suggest that teachers without a bachelor's degree, ceteris paribus, earn more than teachers with a bachelor's degree. Further investigation into this result with a subsequent data set (for a later year) reveals that inclusion of a dummy variable indicating whether or not a teacher is a vocational education teacher reverses the sign of the variable EDUC NO BA to negative. This information was not available for the present sample of teachers.

[9]It has been suggested by Nicholas Kiefer that the error term in the salary equation may be correlated with per pupil expenditure, other instructional expenditures per pupil, and the teacher-pupil ratio and that this would result in bias in the measured bargaining effects. This criticism would have been correct if the dependent variable in the regression equation were average or starting teachers' salary in the district. In this case we would be examining the simultaneous determination of teachers' salaries and the district's budget as well as the allocation of that budget (to instructional expenditures and teacher-pupil ratios) by district decision makers. However, from the standpoint of the individual teacher and the individual administrator within a district who is making the employment decision, levels of expenditures and teacher-pupil ratios are essentially exogenous. Nevertheless, a reduced form equation was also run without the objectionable variables. The REGIONAL BARGAINING coefficient increased from .1388 to 0.2006, while the coefficient on FORMAL BARGAINING decreased from 0.0022 to 0.0012 with a t-statistic of 0.35. The estimates are still reported with these variables included because of the concern over omitting important variables from the analysis and thereby causing bias in the estimates.

[10]Lipsky and Drotning, however, did attempt to correct for spillover effects by evaluating the effects of bargaining in a sample of districts located in regions where district concentrations were relatively low.

[11]See, for example, Frey and Thornton who test the hypothesis that the bargaining districts paid higher wages to teachers even during the pre-bargaining era. This hypothesis was confirmed in both studies, but the effects were smaller than during the year(s) bargaining actually occurred.

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